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Groundwater Wells Near Kennecott Reveal Pollution

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Groundwater monitoring wells have revealed "localized areas of contamination" near the Kennecott mine in western Salt Lake County, according to Robert A. Malone, director of environmental affairs for the mining company.

The extent, cause and possible solutions to the contamination are unknown, but Kennecott has initiated a five-year, $1 million study to find answers. Both Salt Lake County and the state will participate in that study.

"We're not yet sure it's a problem," said Mr. Malone, noting that such a determination can't be made until the study is complete.

Previous studies by the Utah Division of Water Rights and U.S. Geological Survey have suggested a groundwater problem may exist near Kennecott, but until now the company has said only it was monitoring the situation and taking steps to prevent groundwater pollution. Now that the study is beginning, Mr. Malone said all of Kennecott's groundwater information will be made available to the county and state.

Total Dissovled Solids

The groundwater problem is from high levels of "total dissolved solids" — an indicator of the presence of potentially harmful concentrations of toxic metals and sulfates. If widespread, the contamination could prevent the future use of groundwater in the area.

Steven F. Jensen, water quality manager for the Salt Lake County Division of Flood Control and Water Quality, said Kennecott isn't the only spot in the county with groundwater contamination. He said an ongoing study by the USGS has found "extremely high organic and metal concentrations" in locations scattered throughout the county.

Mr. Malone said the most contaminated spot discovered on the Kennecott property is the channel of Bingham Creek east of Copperton. Both Kennecott and the mining companies that preceded it have had facilities in this area. Contamination has also shown up around the evaporation ponds five miles east of Copperton. Kennecott uses these ponds to dispose of excess flows from Bingham Canyon. No problems have been identified in wells in Butterfield Canyon south of the mine.

Steven Taylor, environmental engineer for Kennecott's Utah Copper Division, said most of the contamination is in the groundwater just below the surface. Some has also been found in the deep groundwater at the mouth of Bingham Canyon. He stressed that the problem appears to be localized, noting that while the monitoring wells in the channel of Bingham Creek show high levels of contamination, the water from wells on either side of the channel is generally clean.

Pollution has been found only in monitoring wells, said Mr. Malone. Those wells used for culinary and irrigation water show no signs of contamination.

The major source of the contamination appears to be leaching from the highly mineralized tailings and overburden which covers much of the area. Some of the pollution may also be occurring naturally as water percolates through the huge ore body being mined by Kennecott.

There's No Question

There is no question that leaching of minerals takes place in the expansive gray terraces of overburden visible from the entire Salt Lake Valley. Kennecott regularly pumps water to the top of the overburden piles and allows it to seep down through the dirt where it picks up copper and other metals. Most of this water is captured in a "state-of-the-art" collection system and the metals are removed. The water is then recycled.

If there are problems with the collection system, this highly mineralized water could contribute to the contamination problem.

Mr. Malone said the first step in the groundwater study will be to consider all possible sources of contamination and review all available data on groundwater and surface water. On the basis of assumptions from this early review, a team of experts from Kennecott, the county and state will select sampling points and install a series of monitoring wells. Data from these wells will be collected for several years.